

542,717

Rec'd PCT/PTO 20 JUL 2003

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property  
Organization  
International Bureau



(43) International Publication Date  
5 August 2004 (05.08.2004)

PCT

(10) International Publication Number  
WO 2004/065562 A2

(51) International Patent Classification<sup>7</sup>:

C12N

(21) International Application Number:

PCT/US2004/001668

(22) International Filing Date: 22 January 2004 (22.01.2004)

(25) Filing Language:

English

(26) Publication Language:

English

(30) Priority Data:

60/441,872

22 January 2003 (22.01.2003)

US

(71) Applicant (for all designated States except US): BETH  
ISRAEL DEACONESS MEDICAL CENTER [US/US];  
330 Brookline Avenue, Boston, MA 02215 (US).

(72) Inventors; and

(75) Inventors/Applicants (for US only): AIRD, William, C.  
[CA/US]; 18 Thorndike Street, Brookline, MA 02446 (US).  
YI, Xianjin [US]; 33 Royal Street, Quincy, MA 02170  
(US).

(74) Agent: BIEKER-BRADY, Kristina; Clark & Elbing LLP,  
101 Federal Street, Boston, MA 02110 (US).

(81) Designated States (unless otherwise indicated, for every  
kind of national protection available): AE, AG, AL, AM,  
AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN,  
CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI,  
GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE,  
KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD,  
MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG,  
PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM,  
TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM,  
ZW.

(84) Designated States (unless otherwise indicated, for every  
kind of regional protection available): ARIPO (BW, GH,  
GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW),  
Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), Euro-  
pean (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR,  
GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK,  
TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW,  
ML, MR, NE, SN, TD, TG).

Published:

— without international search report and to be republished  
upon receipt of that report

For two-letter codes and other abbreviations, refer to the "Guid-  
ance Notes on Codes and Abbreviations" appearing at the begin-  
ning of each regular issue of the PCT Gazette.

(54) Title: ENDOCAN COMPOSITIONS AND METHODS FOR THE TREATMENT OF NEOPLASMS

(57) Abstract: The present invention features improved diagnostic and therapeutic methods for neoplasia treatment relating to endocan nucleic acid molecules and polypeptides. In addition, the invention features methods for monitoring the response of a tumor in a patient to therapy; methods for suppressing the growth of a neoplasm by inhibiting endocan expression or biological activity; methods for generating a promoter that directs expression of a heterologous nucleic acid sequence specifically to the endothelium of tumor blood vessels; and methods for using such promoters to deliver peptides to a tumor in a patient.

WO 2004/065562 A2

Rec'd PCT/PTO 20 JUL 2005

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property  
Organization  
International Bureau



(43) International Publication Date  
5 August 2004 (05.08.2004)

PCT

(10) International Publication Number  
WO 2004/065562 A3

(51) International Patent Classification<sup>7</sup>: G01N 33/48,  
33/00, 21/00, 21/75, 33/563

(21) International Application Number:  
PCT/US2004/001668

(22) International Filing Date: 22 January 2004 (22.01.2004)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:  
60/441,872 22 January 2003 (22.01.2003) US

(71) Applicant (for all designated States except US): BETH  
ISRAEL DEACONESS MEDICAL CENTER [US/US];  
330 Brookline Avenue, Boston, MA 02215 (US).

(72) Inventors; and

(73) Inventors/Applicants (for US only): AIRD, William, C.  
[CA/US]; 18 Thorndike Street, Brookline, MA 02446 (US).  
YI, Xianjin [—/US]; 33 Royal Street, Quincy, MA 02170  
(US).

(74) Agent: BIEKER-BRADY, Kristina; Clark & Elbing LLP,  
101 Federal Street, Boston, MA 02110 (US).

(81) Designated States (unless otherwise indicated, for every  
kind of national protection available): AE, AG, AL, AM,

AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN,  
CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI,  
GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE,  
KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD,  
MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG,  
PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM,  
TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM,  
ZW.

(84) Designated States (unless otherwise indicated, for every  
kind of regional protection available): ARIPO (BW, GH,  
GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW),  
Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), Euro-  
pean (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR,  
GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK,  
TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW,  
ML, MR, NE, SN, TD, TG).

**Published:**

- with international search report
- before the expiration of the time limit for amending the  
claims and to be republished in the event of receipt of  
amendments

(88) Date of publication of the international search report:  
16 June 2005

For two-letter codes and other abbreviations, refer to the "Guid-  
ance Notes on Codes and Abbreviations" appearing at the begin-  
ning of each regular issue of the PCT Gazette.

(54) Title: ENDOCAN COMPOSITIONS AND METHODS FOR THE TREATMENT OF NEOPLASMS

(57) Abstract: The present invention features improved diagnostic and therapeutic methods for neoplasia treatment relating to en-  
docan nucleic acid molecules and polypeptides. In addition, the invention features methods for monitoring the responsive of a tumor  
in a patient to therapy; methods for suppressing the growth of a neoplasm by inhibiting endocan expression or biological activity;  
methods for generating a promoter that directs expression of a heterologous nucleic acid sequence specifically to the endothelium of  
tumor blood vessels; and methods for using such promoters to deliver peptides to a tumor in a patient.

WO 2004/065562 A3

## INTERNATIONAL SEARCH REPORT

International application No.

PCT/US04/01668

## A. CLASSIFICATION OF SUBJECT MATTER

IPC(7) : GO1N 33/48, 33/00, 21/00, 21/75, 33/563

US CL : 436/63, 64, 86, 164, 512

According to International Patent Classification (IPC) or to both national classification and IPC

## B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

U.S. : 436/63, 64, 86, 164, 512

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)  
MEDLINES

## C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	Scherepereel et al. Overexpression of Endocan Induces Tumor Formation. Cancer Research 63: 6084-6089, September 15, 2003, see entire document.	1-23, 29-32, 35, 41, 49, 50, 54-56 and 71- 75 ----- 24, 25, 33 and 34

☐ Further documents are listed in the continuation of Box C.☐ See patent family annex.

## \* Special categories of cited documents:

"A" document defining the general state of the art which is not considered to be of particular relevance

"E" earlier application or patent published on or after the international filing date

"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)

"O" document referring to an oral disclosure, use, exhibition or other means

"P" document published prior to the international filing date but later than the priority date claimed

"T"

later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X"

document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y"

document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art

"&amp;"

document member of the same patent family

Date of the actual completion of the international search

23 September 2004 (23.09.2004)

Date of mailing of the international search report

28 APR 2005

Name and mailing address of the ISA/US

Mail Stop PCT, Attn: ISA/US  
Commissioner for Patents  
P.O. Box 1450  
Alexandria, Virginia 22313-1450

Facsimile No. (703) 305-3230

Authorized officer

Alana M. Harris, Ph.D.

Telephone No. 571\*272\*1600

ALANA M. HARRIS, PH.D.  
PRIMARY EXAMINER  
9/29/2004